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ABSTRACT

The University of Wisconsin Learning Innovations Center's instructional design model for World Wide Web delivered courses incorporates a range of collaborative discussions and interactive experiences for the learner. In addition, these courses capitalize on the multimedia learning environment that the web offers to accommodate many kinds of learning styles. This paper provides an overview that highlights the translation of the model into specific online learning activities in the development of a 15-week professional nursing course. Weekly learning activities to enhance student motivation and perception were structured along the following guidelines: (1) build up user confidence with technology; (2) build in the instructor's presence and personality; (3) provide a clear set of learning activities; (4) build on personal and professional experiences of participants; (5) relate content to real situations using case studies and simulation; and (6) build in collaboration and facilitated team projects. Application of these guidelines is discussed. The paper also addresses evaluating the results of the application of the design guidelines by assessing educational effectiveness at the student and instructor levels. (DLS)

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Design Considerations for Enhancing Confidence and Participation in Web Based Courses

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In 1997 The University of Wisconsin Learning Innovations Center was created to serve UW System faculty and academic staff in the development, distribution and support of technology-enabled learning products and services within and beyond the borders of Wisconsin. During the past year, it has worked with the UW Collaborative Nursing Program in the development of five WWW delivered professional nursing courses. The first of these was N317 Health Assessment, developed in Lotus LearningSpace and delivered to 16 isolated professional nurses located throughout Wisconsin, Michigan and Minnesota using a Lotus Domino web server.

UW Learning Innovation's instructional design model for web delivered courses incorporates a range of collaborative discussions and interactive experiences for the learner. In addition, these courses capitalize on the multimedia learning environment that the World Wide Web offers to accommodate many kinds of learning styles. The following overview highlights the translation of this model into specific online learning activities in the development of the 15-week Health Assessment course.

Design Guidelines

Structuring Weekly Learning Activities to Enhance Student Motivation and Participation

Delivering adult professional development courses asynchronously over the WWW involves many instructional design issues. This overview of the design of the Health Assessment course will focus on six design guidelines that were used for structuring weekly learning activities to enhance student motivation and participation:

- Build up user confidence with technology
- Build in the instructors presence and personality
- Provide a clear set of learning activities
- Build on personal and professional experience of participants
- Relate content to real situation using case studies and simulation
- Build in collaboration and facilitated team projects

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Application of Design Guidelines

Build Up User Confidence With Technology

Student participation in web delivered courses relies on three interdependent technologies: the learner's computer equipment, the user's Internet access and the usability of the hyperlinked WWW learning environment. UW Learning Innovations offers telephone helpdesk support for all distance learners. This has enabled course developers to focus their attention on helping learners gain confidence with the web interface itself and to rapidly interact with online learning activities. The practicing adult nurses registered for the Health Assessment were primarily in rural areas, had low self-confidence with computer technology, and had demanding personal and professional schedules. Keeping this in mind, the course was designed to build self-confidence through a series of 'scaffolded' learning activities.

Each of these activities was presented in a step by step fashion that provided all the resources necessary to enable the student to successfully demonstrate key online competencies such as contributing to a discussion, responding to a comment, and submitting an assignment. In this manner, the first two weeks of learning activities started by slowly increasing engagement with course content so that learners became confident with their online skills before being asked to perform more demanding cognitive tasks.

Build In the Instructor's Presence and Personality

The social dimension of asynchronous learning is critical to instructional effectiveness. Individual success or failure in a course often depends upon the extent to which students feel a sense of community (Wergrif, R., 1998). When understood as socially situated, learning can be viewed as a process of becoming part of a community of practice. (Lave and Wenger (1991) . The first step to creating a sense of an online community is the projection of a "human face" to personalize the technologically mediated course content.

In the Health Assessment course, this was done in several ways. The home page of the course had a weekly announcement from the instructor. These informal, yet helpful course updates helped project a human presence into the course that let the students know that she cared about their success with both the technology and coursework. In addition, though she was not a part of the over 600 discussion comment made between students, she did address each student's discussion comments three times during the fifteen weeks besides responding to their private assignments.

Provide a Clear Set of Learning Activities

The development and use of hypertext based learning environments has been widely researched. Common to many of these has been the discussion of how best to enable the learner to effectively control the alternative informational pathways. Land, & Hannafin (1996), and Horney, et. al (1994) concluded that effective use of hypertext systems requires a sense of purpose while utilizing linked learning resources. In the Health Assessment course, students were presented with a clear list of learning tasks to help them avoid the confusion and disorientation similar to that found by Gail and Hannafin (1994).

Weekly learning activities were listed on a single page as a checklist. From this list, students linked to separate lecture, case study, and discussion pages. Not only did this list serve to anchor the weekly activities, it helped busy professional nurses plan their week to stay on task no matter what time of day they logged on. Students understood clearly that there were deadlines for submitting discussion comments. While this was highly proscriptive, it allowed students who were novice WWW users to gain control of the interface, quickly build confidence completing the required activities and benefit from active discussion participation by all class members.

Build on Personal and Professional Experience of Participants

Asynchronous, network-delivered professional courses have been shown to support the development of content expertise and facilitate reflection about practice. (McMahon (1997), Honey & Heriquez (1993), Roupp et al., (1993)). Student contributions of professional experiences were central to the Health Assessment course. At the beginning of each week, each submitted a short discussion comment from his or her clinical experience. Students also participated in large and small group discussions that interwove their clinical experience with the preferred practice discussed in the readings, lectures and case studies. This type of facilitated reflection worked well in Lotus LearningSpace because the CourseRoom (threaded discussion area) is closely linked to the text and multimedia resources of the MediaCenter.

Relate Content to Real Situations Using Case Studies

Nursing education has traditionally used clinical case studies to illustrate both the content and methodology of preferred practice. The use of case studies in a hyperlinked or multimedia delivered learning environment has been shown to significantly improve the quality and motivation of the learning experience (Jarz, Kainz and Walpoth 1997).

In the Health Assessment course, the presentation of online reading materials, graphics, audio and WWW resources was done within a tightly organized sequence of clinical case studies. These illustrated case studies did not try to duplicate the accompanying textbook. Instead, they served to highlight important concepts that linked the professional clinical experiences to the threaded discussions. In this manner the presentational and collaborative elements of the learning environment served to engage the students in achieving the culminating learning objectives.

Build in Collaboration and Facilitated Team Projects

Positive interdependence underlies the successful application of collaborative learning principles. (Johnson, Johnson & Smith 1991). The benefits of online collaboration in Internet based education has been widely researched. The core of UW Learning Innovation's instructional design model incorporates the most successful findings of this research. The Health Assessment course was built around a series of weekly discussion activities that engaged the students in critical examinations of comparative clinical experiences. As part of a group reflective activity, each student was able to widen their professional understanding of how the health assessment skills described each week applied to a variety of clinical settings.

Discussion activities also took place within the unique private team rooms made possible by Lotus LearningSpace. Each student's logon identity allowed him or her to only see the 'conversation' between their team members. In this manner, the depth and meaning of each team member's contribution was enhanced and responded more directly to.

Evaluating the Results of the Application of Design Guidelines

UW Learning Innovations has developed a multilevel course evaluation process that seeks to assure all stakeholders involved that its courses are of highest quality. Educational effectiveness is assessed at the student level by a combination of contribution analysis, end of the course student surveys and extensive reviews of student technology support reports. At the instructor level, evaluation is done of course design and development process including the success of the instructor training activities. At the client level, evaluation is done of the overall efficiency and cost effectiveness of the entire development and student support process.

To date, the course design guidelines highlighted above have been done primarily at the student level. All of the students participating in the Health Assessment course completed the course. Contribution analysis showed that the median number of contributions during the 16 weeks was 40 per student compared to the 44 required by the instructor. Though participation during the second half of the class was less than the first, there was less variation between members.

Student surveys were returned by over sixty percent of the students. Most survey questions regarding course design issues received overwhelming positive responses. All students reported feeling comfortable performing learning activities within three weeks or less from the beginning of the class. They felt that the lectures and case studies were clearly laid out and that the graphics (over 110 total) were worth the download time. Activities that sent students to other WWW resources were found very helpful by some and somewhat helpful by others. The survey question that asked "what aspects of this course helped you feel you were part of a community of learners?", returned a variety of positive responses. All of these involved student's comments supporting the use of collaborative discussions and teams. In addition, the use of weekly announcements by the instructors was universally praised as very helpful. Finally, the structuring of the course around a weekly checklist of activities was universally praised as contributing to helping students keep up with the very demanding course material presented.

Professor Scheibel evaluated the success of her course and the design of the learning activities in the following words:

> Learning is not done in isolation but is best done when attached to something we already know. It is also enhanced when active participation of the application of the learning is done. The design I choose to use allowed each of these elements to assist the learner in mastering the information. The personal experience gave the student a framework in which to place the new material. The mini lecture showed the thinking of the teacher-role modeling for the student the application of the knowledge. The collaborative activity allowed the students to work in teams to engage their learning with each other and validate these skills amongst themselves and then share them with the wider class. Finally the individual activities allowed students to gain expertise in applying the information learned to an individual patient in a real

setting. The students found this design well suited to their needs. They engaged in the activities and did well on examinations and on assignments.

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Autobiographical Sketches

William Winfield is currently a coordinator of the course development team at UW Learning Innovations. He has worked as an instructional designer in training instructors in adapting their courses for web delivery. He has presented previously on the use of the WWW in multilingual agricultural outreach. He received his Masters in Education from the University of Wisconsin in adult distance education.

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